Food-for-Seed- A New Collaborative Approach for Food Security

FAO/WFP Collaboration

The paper attempts in a very brief manner to review the role-played by the Food-for-Seed scheme in reducing food shortages in Afghanistan by ensuring ways that rural communities can have sustainable access to new and high yielding technologies. It uses seed and food together as a package for technology transfer.

Seed and Food Security

In recent times, many countries in the Asian and African continents have undergone frequent food shortages brought about by natural calamities as well as complex internal strife. Unfortunately, Afghanistan is continually facing food deficits due to man made and natural disasters. The increase in internal displacement especially of farmers at crucial times in the cropping season and climatic aberrations in recent years forced the Aid agencies to divert their already limited resources to procure food from outside to meet emergency situations. Such situations place additional strains on an already shattered economy and can cause tremendous social and economic setbacks having national and international ramifications. Lack of food and high prices have reduced the level of nutrition of the population, especially in the war-affected zones. Tuberculosis and other diseases have shot up sharply. Most critical is the psychological and emotional disorder of the affected population. This is going to be an enormous problem for the Aid agencies working presently and for a future Government of Afghanistan. Continuos increase in the area and production of opium poppy is another product of the current situation.

Food security is heavily dependent on availability of quality seed. To become food self-sufficient, farmers should have on-going access to quality seed in both normal and crisis situations. Viable seed supply systems to multiply and distribute the seeds or plant materials that have been developed or preserved are critical for the success of the food security programmes. Seed supply is normally provided by the informal and formal seed supply systems whereby the farmer saves part of the harvest or exchanges seeds with farmers in the community or the formal seed supply systems deliver quality seed to farmers on a regular basis.
In most of the natural disaster prone countries individual farmers have short-term seed security systems built into their farming systems. Unfortunately, Afghan farmers in some areas have lost the access to formal and informal resources due to prolonged civil war and frequent internal displacements. The chances of revival of formal seed supply system in the near future are very remote. The country has probably lost 90% of it's agricultural scientists. Some lost their lives but the majority went abroad. How many will return to Afghanistan is an open question. Very few are expected to come back. The majority of the national experts working with various aid agencies could leave the country on the first available opportunity. So, it will be difficult for any government to develop a proper scientific seed programme with limited trained personnnel.

Those who have slight knowledge of agriculture know that seed constitutes one of

the primary needs for re-establishing displaced farmers. In the past (up to 1995), Afghanistan received seed aid mainly for humanitarian reasons while little consideration was placed on the production of quality seed of adapted varieties inside the country. Although assistance has benefited Afghan farmers in the short-term, in easing food shortages in small pockets especially near the border to Pakistan. Most of the returnees brought food grain with them at the time of repatriation and used as seed due to non-availability of seed. The poor performance of the untested and nondescript seed material, serious genetic contamination and complete displacement of local land races and farmers' varieties due to exodus of farmers from 1978 t0 1988 caused enormous damage to the traditional production systems of the country. This presented a risk of bringing in new problems such as pests, disease and weeds besides poor yields with the return of the refugee farmers. Returnee farmers and some aid agencies paid little attention to the danger of genetic contamination and/or displacement of traditional varieties.

It was clear that coordination was needed between emergency relief and development assistance programmes to avoid problems of non availability of seed of adapted varieties at reasonable price and introduction of inappropriate crop varieties and pests which may affect further farmers productivity and contribute further to food insecurity.

In-Country Seed Production and its Commercialization

The production of seed within the country and directly with the communities was considered the best solution under the present situation especially when Afghan farmers had sufficient land, water and labour to grow their own seed. So, FAO started producing seed locally tapping local resources supported by new techniques. Thousands of seed growers were registered to produce seed throughout the country. In order to ensure that farmers hand over the seed so produced to FAO, a concept of buy back against cash was introduced. Unfortunately, due to risk of shortage of food, sharp fluctuations in food price and hyperinflation, most of the seed growers refused to sell the seed against cash. The situation was critical. The seed produced at a high cost was about to be consumed as food, thus failure of the programme in the very first year itself was almost certain. Besides, the programme was conceived on user pay theory, therefore, commercialisation was an essential element. To make the scheme fully commercially viable it was necessary to sell the seed at a commercial viable price, which is usually 200=300% more than the grain price. The prices of the quality seeds have got to be substantially higher than the grain prices, because seeds are quite different from grain in regard to yield potential and other desirable characteristics, viability, freedom from weeds, diseases, inert matter, etc, and their cost of production is also higher. There are a number of cost components that have to be covered if seed production on commercial scale is to survive. These include:-

Additional cost of production and incentive to the seed grower; (Presently absorbed by WFP through Food-for-seed scheme)

Risk of rejection. A seed grower faces not only the normal risk of farming, which also goes up on account of higher investment, but also the risk of the seed being rejected. (Always absorbed by Contract Seed Producers)

Cost of certification.(Presently absorbed by FAO-Crops)

Cost of processing to remove under-sized and cut grain, foreign matter, including weeds and to treat it with fungicides and other chemicals to safeguard against seed-brone diseases. (Presently absorbed by FAO-Crops)

Cost of packaging. (Presently absorbed by FAO-Crops)

Cost of technical guidance and supervision.(Presently absorbed by FAO-Crops)

Cost of marketing, Transport and handling costs and Incidental losses loss of viability, etc. Cost of technical guidance and supervision.(Presently absorbed by FAO-Crops)

Cost of storage under conditions that prevent loss of viability. (Presently absorbed by concerned IP)

A reasonable price is the most important factor in popularizing the use of quality seeds. Apart from the fact that Afghan farmers are, by and large, small holders and poor and, therefore, every Afghani matters to them. The degree of seed consciousness is quite low and ordinary food grains serve as a substitute for quality seeds. As a matter of tradition, the farmers have been keeping their own produce as seed, instead of selling it as grain, or they have been meeting their demand for seeds through farmer to farmer transactions, where the prices are only marginally higher and the quality hardly different from that of grain. Before the emergence of the present programme the improved seeds were distributed free under emergency programme by all aid agencies.(Some agencies are still distributing free though the quantity involved is not very high)

Formulation of Food-for-Seed Scheme to Prevent the Collapse of the Seed Programme

Seed producers refused to sell raw seed against cash and poor farmers were not in position to purchase at commercial prices. Therefore, procurement of seed under the age-old barter system i.e. exchange of the seed with food and then marketing it on subsidized price was considered the only practical solution. Sufficient food was not available in the local market. Thus, purchase from local market was out of the question. FAO-Crops left with two choices either continue free distribution by importing from neighboring countries or produce inside the country without following one hundred percent fundamentals of a commercial seed industry. The best option to bring seed within the reach of each willing farmer was to sell the seed only fractionally higher in price than ordinary grain. (10% higher than grain price). It was considered good enough to insulate the programme against inherent evils of free distribution and potent enough to inoculate the programme with the essentials of commercialization and privatization over a period of time. Arrangement of food for exchange with seed was still a problem.

In response to this peculiar situation FAO- Crops discussed the problem with WFP and Food-for-Seed was jointly conceived to tackle this problem. The United Nations High Commission for Refugees (UNHCR), European Union, Governments of Switzerland, Sweden and Japan and UNDP assisted in absorbing the additional

cost and technical support through financial support. NGOs and communities helped in rapid multiplication and distribution.

The wheat seed was exchanged at a rate of 1:1 that is equal ratio between seed and food plus reimbursement in kind for the expenditure incurred on roughing, isolation, transportation and for following improved seed production practices. The reimbursement is made on actual basis but not exceeding 25% of the total quantity of seed handed over by the contract seed producer. For other seeds namely rice, maize and pulses a fixed exchange ratio is fixed each year depending on the prevailing price of these commodities in the market. For year 2000 it has been 1:3, 1:1.25 and 1:3.5 for rice, maize and pulses respectively. No additional food was provided as reimbursement of other cost incurred by the seed producers. This ensured that seed growers had enough food to feed their own families and that a large proportion of his seed crops would travel out of the production centre to other farmers specially in food deficit areas. Initially, only wheat seed was included in this scheme but later maize, rice and pulses were also included.

Increase in Crop Productivity and Food Security

The main objective of FAO-Crops and WFP is to improve national food production capacity so as to achieve basic household food security and lay the ground for further increase in crop productivity. Through distribution of seeds of early maturing high yielding varieties farmers were enabled to produce more food per unit area. As a result, the crop productivity has almost acquired the level of 1978. Before the war, the area under poppy was 6,000 ha. and production about 200MT. Both the hectarage and production of opium have increased 1,000% after the war. This has directly affected the main food crop of Afghanistan that is wheat not only by reducing area but by grabbing best area and slicing lion's share in the agricultural inputs.

The quality seeds of improved varieties have potential to increase the productivity 100 to 300% over seeds of poor quality of old, obsolete and degenerated varieties. Due to the Food-for-seed scheme the new seeds have now been planted from the Kunar river to Amu dariya (Mazar) and from Khost to Kandahar. The wheat crop is of uniform height with full ears, betraying major pest and diseases. The seeds of different crops procured under the scheme till the date is as follows:

S. No.	Year	Seed procured (MT)	Approx. area brought under improved varieties (ha.)
01	1994	175.00	1,400.00
02	1995	2,183.50	27,293.00
03	1996	3,858.70	48,233.00
04	1997	3,064.00	38,300.00
05	1998	2,557.48	31,968.00
06	1999	3,475.135	43,439.00
		15,313.815	190,633.00

ECONOMIC BENEFITS.

Till date more than 153,130 farmer families have received quality seed of improved and adapted varieties along with DAP and Urea fertilizers. The total area planted under improved seed exceeded more than 190,633.00 ha. The incremental benefits produced by the scheme have been enormous. The seed distributed under the project serviced the area sown under old and traditional varieties. Yield in these areas had declined considerably over the years of desertion or constant use of seeds of old and degenerated varieties. The improved seeds distributed under the scheme have potential to give 100% to 300% more yield due to the shift from traditional seed (low technology) to new improved seed (high technology) farming in comparison to the average productivity of 0.8- 1.0 Mt of old varieties. By bringing large area under improved seed the scheme created opportunity for more seasonal employment. It is difficult to translate the benefits exactly into dollars and incremental food production in MT but certainly production and distribution of quality seeds and fertilizer had made significant impact on the crop yield and food security in the targeted areas. The seed was distributed all over the country including food deficit areas, poppy-growing area and war zones. Improved seed supplied on subsidized prices markedly improved the small farmers access to essential inputs and an alternative to willing farmers to reduce dependency on cultivation of illicit crops such as poppy and cannabis without fear of economic loss.

Besides, direct increase in food production, the scheme had provided several other indirect benefits namely:

(i) Incremental farm labor, used mainly at peak activity times as skilled and semi-skilled labor on seed processing plants and during seed production.

(ii) Benefited large number of farmers through farmers to farmers exchange of the seed produced in subsequent generations by the direct beneficiaries of the seed.

(iii) Training and technical assistance received by the IPs and contract seed producers that ultimately improved the technology base of the country.

Dissemination of New Technology through the Food-for-Seed Scheme

Seed is fundamental in the transfer of technology to farmers. The seed programme is making full use of this aspect because the aim of programme is not limited to supply only good quality seed of improved varieties. In fact, the seed programme is attempting to introduce new technology, increased use of fertilizer, a new cropping system and a new crop husbandry system through new varieties. The willingness of the farmers to change to seed of improved varieties is helping in spreading these technological changes. To exploit the full genetic potential of the improved and fertilizer responsive varieties, arrangements were made to provide them together with matching fertilizer from off-farm sources. This experiment has proved highly successful and is now being extended on a larger scale in the chronically food deficit areas to increase productivity and production. The Bamyan experiment jointly conducted by FAO-Crops and WFP is interesting for study and repeat. This is because the seed and fertilizer provided as a combined package has proven very effective indeed in "priming the pump" of local crop production. By using these inputs, farmers have in the majority of instances been able to double or treble their crop yields, compared with using traditional seed grown under the same conditions. Fertilizer (DAP and Urea) is still not

readily available in Afghanistan. Unfortunately, the food deficit areas are also deficits in fertilizer. In fact, hardly any fertilizer is available and if any thing is available its quality is very poor and the cost is exorbitant. At the present time, it is very difficult for farmers to reliably obtain high quality seed and matching quantities of fertilizer from the local markets on time, even where they have finance available, except through the agencies of the UN (FAO and WFP), and/or other international aid agencies. The Project imported more than 6, 865 MT fertilizer in1997-98 for distribution along with seed.

Gradual Privatization of the Seed Production and Distribution to Introduce Sustainability.

The element of cost recovery was introduced in the scheme from the very first year. Both seed and fertilizer were sold to the farmers at a reasonable price. The seed was sold at a price at least10% higher than the grain price in the local market while fertilizer on a small-subsidized price fixed in consultation with ACBAR. This resulted in accumulation of more than US$ 2.07 million in revolving fund maintained for financing private seed enterprises in future. The funds are managed by a fund management committee comprising of RR, UNDP, Country Director, WFP, Programme Manager, FAO Crops, STA (Seed) and concerned IP. It is important that the scheme is continued but responsibilities in certain areas should be transferred as soon as possible to IPs. Till date the primary object has been to reintroduce quality seed of improved varieties and restart in-country production. Now the activities must have a greater commercial orientation if sustainable production systems are to be established. This is particularly the case for the NGOs if they are to privatize their seed activities but it is equally important to demonstrate that the ISE units can also survive on their own. It will require persistent effort and an ability to generate interest in seed programme among NGOs and community. Recently, a Seed-marketing Consultant has studied the problem and submitted his report. The NGOs have been requested to study the report and put up proposal for the consideration of the Seed Review Group.

General Monitoring of the Seed Sector including Food-for- seed Scheme.

The sale of seed and fertilizer by the IPs has converted the seed programme in to a more or less as commercial activity which requires proper planning, selection of the suitable varieties, coordination among important players of the seed sector namely donor, UN agencies, producer and other concerned agencies besides ensuring full transparency. This was also necessary to avoid the selection of wrong varieties, glut or shortage of seed in the area of production and to understand strength and weakness of the programme. In absence of any statutory or government constituted seed board/committee, it was decided to constitute a Seed Review Group (SRG) under the chairmanship of Project Manager. All NGOs/IPs, NPPP (Seeds), STA (Seed), STA (Crop Improvement), UNDP and ISC were appointed as regular members of the SRG. Cooperating UN agencies such as UNDCP, WFP, OPS and UNHCR were taken on board as permanent special invitees. All major donors were also invited to attend the meeting. Some of them attended the meeting regularly. The SRG met twice every year, i.e. before the summer and the winter cropping season to review the production of the previous season and to plan for the ensuing

season. Beside this, performance of the varieties, out break of disease and pests and receipt of the sale proceeds, etc. were regularly discussed as separate agenda items. All policy matters relating to seeds were also discussed to seek the opinion of the participants. In fact almost every thing which has any bearing on the seed production and distribution was discussed in the SRG meetings. The 9th meeting is due in April/May 2000.

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